THE

MAGNET.

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LIFE.

For the Magnet.

ANIMAL LIFE.

BY DAVID PORTER, M.D.

Sir,—If you understood that by the term life, I do not mean to designate caloric, electricity, magnetism, or any other *substance*, but simply operation or function, I cannot see how your difficulty necessarily arises *in limine*. I cannot, indeed, admit, that in death "the muscles, nerves, tissues, and every part, remain as before;" but will readily acknowledge, that the change may not be appreciable by those unacquainted with the nature of the functions which I would name life. When a watch stops, if its owner is not acquainted with the nature of its internal operations, he may not be able to detect the cause, or discover any change whatever; and yet, a proper artificer may see it in an instant. He may probably find that its operations are merely suspended by some clog, or mal-position of parts, or some fracture or other lesion; or, perhaps, it may even be worn out, without any very striking variation of form or arrangement. Now, if all this might occur in relation to a watch, how much more readily may the functions of that vastly more ingenious and complicated galvanic machine, an animal body, be suspended or destroyed by a thousand causes, imperceptible to common, or even any human vision. When merely suspended, as in the watch, they may be restored; and, in all cases, it is plain, that in proportion as we understand the healthy functions, we shall be better qualified to restore them when lost. A proper answer to your request, then, you will perceive, must embrace the whole round of medical science; and on this subject I will endeavour to meet your wishes, as well as those of my reverend friend J. and others, as soon as I have made such preliminary physiological explanations as may be necessary in order to understand, in some degree, the healthy functions. In my last, I promised to give, in explanation of my views, a few additional statements regarding inverse sympathies in my present letter. To this, then, I must proceed.

No subject, pertaining to physiology, seems to have received less attention, or to have been more vaguely treated of, than inverse sympathies. This is certainly remarkable, in an age of searching scrutiny on most philosophical subjects. The science of nature is rapidly advancing to maturity. The properties of matter are already known, the laws of nature arising from them are all more or less clearly traced, and the great first principles of natural philosophy are in the way of speedy development.

The same cannot, indeed, be said of the science of mind, but enough is known to show, that mind and matter are totally different, endowed with different properties, and regulated by different laws, and that something corresponding to mind under the name of instinct, extends through all grades of organised beings, from those mammalia immediately below man down to the meanest vegetable. These opposite entities of matter on the one hand, and mind or instinct on the other, are capable, under certain circumstances, of uniting, and exciting reciprocal influences over each other. Their union depends on life. Thus far all will, perhaps, agree. That life, or a living state, is indispensable to the union of matter with instinct or mind, will be admitted by all. But the question, *what is life*, will still remain unanswered. Is it a separate entity endowed with peculiar properties, or simply a display of laws emanating from the common properties of matter suitably arranged? Now, it must be borne in mind, that the former view cannot be received until the latter is shown to be impossible; or, in other words, it would be manifestly unphilosophical to assign a new and unknown cause to phenomena which may be produced by common and well known causes. Possibilities in these cases may be assumed as, at least, probabilities. I shall accordingly, at present, merely attempt to show that inverse sympathies may be traced to the well-known properties of matter, under guidance of anatomical structure, and that life, or a state of life, is a mere effect of order.

Let it be recollected, that our theory contemplates the nervous system as an electrical machine; or, rather, a galvanic battery. The brain and ganglia each consists of two substances for generating power, and the nerves, of bundles of insulated conducting fibres. We assume, for the present, that the brain is constantly negative towards the minor ganglionic system, and as occasion requires, in obedience to the will, towards the voluntary nerves, or in other words receiving electricity from them; and positive towards the eighth pair. We, then, have positive and negative powers displayed in the living body according to the arrangements of the system. Or, adopting, as we do, the Franklinian theory of electricity, we have one set of nerves for receiving and another for discharging electricity.

Besides transmitting sensations, the negative nerves

terminate on muscular fibres and lymphatic vessels, to produce muscular contraction and absorption of positive or alkaline particles. The pneumogastric, on the other hand, besides its peculiar sensations, terminates in the ultimate cells of the lungs, and in the stomach to charge the lymph of the blood in the former, and the food in the latter. With regard to the latter we think it may be demonstrated, that what is called the gastric juice itself, is neither more nor less than a small remnant of food whose globules are highly charged with positive electricity, and of course repel each other. And that the coagulation of the lymph of the blood after it is drawn, depends on a discharge of electricity, we should think could not escape any unprejudiced observer. It coagulates more rapidly in proportion to the surrounding heat, or as it is agitated, or flows in small or slow streams, or into shallow or metallic vessels, or into a vacuum, or in any other way in which the escape of electricity is facilitated. It coagulates, also, more rapidly in the ratio of its specific gravity, or in other words in proportion to its amount of coagulating lymph and consequent deficiency of electricity in a given quantity. In diminished excitement, also, especially if it amounts to syncope, a rapid coagulation takes place.

On the other hand, blood coagulates slowly when the system has been much excited, or, according to my theory, when its globules are highly charged, or when it is caught in glass vessels, particularly if it is suffered to flow rapidly into a glass bottle, and well stopped with some non-conductor.

On the inner surface of the right auricle, the positive nerves may attract through the veins to the heart, water and other oxygenous and negative substances, which are thus taken up by what is called venous absorption. It will be recollected, that the conflicting opinions of authors on the subject of absorption, are reconciled to some extent by my theory. Majendie and his coadjutors might be right in supposing the qualities of upas, nux vomica, rhubarb, alcohol, acids, and other things which are imparted to water, reach the circulation by veins; while Hunter and his friends might be equally right so far as regards albumen, lymph, indigo, musk, various kinds of virus, &c. In connexion with negative nerves, too, I may here state, that the positives may, instead of contraction, produce elongation of muscular fibres, as is most evident in the power of elongating the linguales muscles of the tongue.

If this theory is correct, inverse sympathies are easily explained. As the whole amount of transmitted electricity must depend on the aggregate power of the brain and ganglia, the different nerves of the positive and negative sides of the system respectively must mutually limit and control the functions of each other, and produce inverse sympathies corresponding with the anatomical arrangements of the ganglia. The different negative nerves, for example, will be thus associated, not only as regards muscular contraction, whether voluntary or involuntary, but as regards lymphatic absorption; because both are sources of positive electricity. A similar remark, mutatis mutandis, may be applied to the system of positive nerves. Let us suppose the opposite poles of a galvanic pile to be united by several wires. Now it is evident, that as the power of the pile is limited, the several wires must, in like manner, limit each other in the business of transmission. That is, some can only increase by diminishing others, and vice versa. This is precisely what we believe takes place in the living body. On this law is founded the efficiency of all counter-irritation, so efficacious in the hands of the physician; and without it, an inflammation of the pleura would no more yield to a blister on the chest, than a fire on one side of a wall would be extinguished by another fire on the opposite side. This law extends to the functions of the mind, as well as those of the body. For this reason great exertions of either body or mind suspend lymphatic absorption, till lymphatic accumulations acquire power in turn to suspend those exertions in sleep and rest. But without rendering my epistle too long, I cannot descend to particulars at present. To sum up the whole, we must regard the brain as a great ganglion giving equal amounts of galvanic power to its opposite positive and negative nerves. Each set of nerves, accordingly, exert among themselves, respectively, those reciprocal influences called inverse sympathies. Minor ganglia, by associating together groups of negatives, at once establish among them in succession, more immediate inverse sympathies, and give them greater relative power accordingly, as the field for displaying it is less, or their functions more important. Without an opthalmic ganglion the feeble stimulus of light on the ciliary branches of the fifth pair could not suspend the power of those from the third, so as by relaxing the iris to suffer it to dilate, and thereby contract the pupil. The nerves of smell and taste, which most probably are the lateral nasal and vidian or chorda tympani, could not have had sufficient relative power without a spheno-palatine ganglion; nor could those of the salivary glands without a maxillary ganglion. The gentle vibrations of our atmosphere must have been still more ineffectual in causing us, by means of the portio dura, to arouse the tensor muscles of the tympanum, without an auricular ganglion. The necessity for a cardiac, and great semi-lunar ganglion, for the same reasons, will appear at once.

Rostraver, Westmoreland Co., Pa.;
March 9, 1843.

ELECTRICITY.

For the Magnet.

INTERESTING EXPERIMENTS.

Sir,—Having discovered, as I supposed, that many, if not all the phenomena in Pathetism, were dependent on electricity, I was led to try some experiments in the latter, the further to detect their identity. Herein I send you the results.

From some experiments in Pathetism, it appeared to me that the *negative* electricity sometimes passed to the *positive*, and not the *positive* to the *negative*, as is said to be the case in the discharge of the Leyden jar. To ascertain this fact with regard to electricity, I took four pieces of writing paper, wrapped them around and tied them to the outside of a Leyden jar. I next charged the inside, as usual, from a machine, and made the connexion between the paper and the knob of the jar, which immediately discharged itself, as was to be expected; and on examining the papers they were found to be punctured, and all burned on the side from the jar, as though electricity had left the negative side, passed through the papers and conducting rod, to the positive or inside of the jar. I next fixed the papers on the knob of the jar, and repeated the experiment with the same result, the papers being burned on the sides next the knob, as though electricity still passed from the negative to the positive side.

I next discharged the jar by means of two discharging rods, placing the papers between them, their other ends being connected, the one with the positive and the other with the negative side of the jar. In this case the papers were punctured, not as in the two former experiments, but that half of them next to the negative were burned on that side; the other

half were burned on the side next the positive, as though the electricity started from the middle of the papers, and went both ways to the positive and to the negative.

ELECTRICAL ATTRACTION.

Two substances similarly electrified repel each other; but if one is positively and the other negatively electrified, they attract each other; or, query: does the positive only attract the negative, as would appear by the two first experiments above related. Negative electricity may be conducted from the cushion of an electrical machine to a person on an insulated stool: why not, then, from the negative side of one jar to either side of the other? To ascertain this, I connected the outsides *only* of two jars, A and B, both being insulated. I then charged the inside of A positively; broke the connexion between them, and made another between the inside of A and the outside of B; but *there was no discharge.* Indeed, I can contrive no way to draw the negative fluid from one side of a jar, the other side being positive, without a communication between the two sides.—But whenever a jar is charged, the positive fluid may be conducted off by any of the good conductors, without a direct communication being made between the two sides. Is it a fact, then, that the positive fluid attracts the negative, yet is not *attracted by* it? If so, whenever a jar is discharged the negative fluid should rush to the positive, to restore the equilibrium, or rather to *neutralize* the positive side. The following experiment, among many others, claims our attention.

I charged the insides of two jars with the positive fluid: their outsides of course were negative. I then applied the knob of the jar A to the outside of the jar B—this was bringing a positive and negative surface in contact; but the discharge was not as usual, when both sides of the same jar are connected, by a single spark and report, but by a kind of gradual and reluctant discharge, attended by a multitude of faint sparks and feeble reports. I am aware, that this does not prove or disprove a mutual attraction between the two electricities; but it proves, in my opinion, that the negative fluid is held to the outside of the jar by the attraction of the positive within; or, perhaps, by a mutual attraction between them. So when A's positive side was connected to B's negative—B's negative fluid was equally attracted to the inside of both jars, and, consequently, could not pass to either. Neither did this slow discharge from the inside of A, change the state of the outside of B; for B's electrometer all the while showed no diminution of B's positive fluid within; and on making a communication, immediately, between the two sides of B, a regular discharge ensued.

But what became of the positive fluid that escaped from the inside of A? that jar being discharged by the slow process above described, it was not found on the outside of B—it did not escape through the atmosphere, being conveyed through a wire passed through a glass tube. The only rational answer to the above question, would appear to be this:—the positive fluid in A did not pass off at all, but having a great attraction for the negative fluid, drew it slowly from the outside, or negative, of B; while the positive side of B, having an equal attraction for negative, drew it from the atmosphere as fast as A's positive drew it from B's negative side. This would keep the jar B in the same state it would have been in had it not been connected at all with it; which was found to be the case, as indicated by its electrometer before alluded to.

If any one should doubt that electricity has such an attraction through glass without passing through it, let him repeat the following experiment. Take a wire eighteen inches in length, suspend it by a silk thread so as to be in equilibrium, like a common scale beam; charge the inside of a jar, and hold a pane of glass under one end of the suspended wire, and bring the knob of the jar under the same end, the glass being between them. The end of the wire will be drawn down several inches. Remove the glass, and touch the end of the wire with the knob of the jar; bring back the glass, apply the knob as before, and the wire is as much repelled. Remove the glass again, and touch the wire to the outside of the jar, and apply the glass and knob as before, and it is again attracted; and this may be repeated with the same results until the jar is exhausted. Thus, it appears, that when the knob and wire are in opposite states they attract, and when in the same state they repel, notwithstanding the interposition of a non-conductor.

I am aware of the uncertainty that must attend conclusions drawn from this science, by any new experiments of this kind; and also, that some of the above experiments are not new. But I cannot reconcile them to the commonly received opinion, that the positive electricity *always* passes to the negative, neither can I believe that the outside of the jar is in its natural state, and is said to be negative only in relation to the inside, as some writers assert. I am well aware, too, that experiments in galvanism will, by some, be referred to, to prove the current of this extremely attenuated fluid.

Indeed, I do not know that the above experiments will much interest your numerous readers; but if the supposed facts above alluded to could be satisfactorily *proved* or *disproved*, in either case we should be able to establish other facts in the science of Pathetology, of no ordinary interest. And for this purpose alone I have given my attention to it, hoping that others, who have more time and talents than the writer, would devote themselves to it, and report the facts as they find them, through "The Magnet," or otherwise, not only for the gratification of the writer, but for the advancement of a science just now beginning to present itself to our consideration, like a diamond of the first water, before whose superior brilliancy all others fade into obscurity, as stars before the splendid orb of day.

Yours sincerely,

ZENAS CAMPBELL.

Great Bend, Pa., Feb. 17, 1843.

For the Magnet.

THEORY.

Dear Sir,—Since I entertained the belief of Pathetism, I have imagined theory upon theory to explain how, and in what way, the effects are produced by the operator upon the subject; and I will now give the results of my imaginings, and I flatter myself that they are worth something.

I believe there are two fluids used as agents by the Great Creator in the construction of his universe—that these two exist in every thing: they are Electricity and Magnetism. Electricity the animating principle, magnetism the opposite.

I believe that when a subject is pathetised, the electric fluid is exhausted or drawn out by the will of the operator, and nothing is left in the subject but the magnetic fluid.

This explains the absence of pain in the subject, when his own body is cut or pricked, there being nothing but magnetism or absence of feeling; and also when the operator is hurt—the subject feels it, also, as his principle of sensation (his electricity) is in the magnetiser. Their two existences are identi-

cal, and the subject for the time is capable of the same emotions of pain or pleasure of the operator. By the process of awakening the electric fluid is restored to the subject; and if the subject be weak by sickness, and is deficient in electricity, he will not only get back his own electric fluid, but, also, take from the operator, and this will account for the benefits resulting to patients from being thrown into the state of somnipathy; and, also, the weakness of the operator after operating. Damp air is a bad conductor of electricity—dry air the reverse: that is why it is harder in damp weather to operate. Health, mentally and physically, depends upon these two fluids being properly balanced. They may, or may not, be equal in quantity, but they must be contained in the body in proper proportion. There may be more magnetism or more electricity, I cannot say which; but be that as it may, they must be properly balanced.

Pain is caused by a superabundance of electricity in the part, and weakness by the absence of a sufficient quantity, or a superabundance of magnetism; and when pain is to be relieved, it can be done in many cases by moving the hand over the part affected, and drawing out the superabundant electric fluid. When the pain is gone, stop; for if the operator continues, he produces a feeling of numbness in the part, which I presume is caused by a superabundance of magnetism.

There is more electricity in the young than in the old; and therefore, they have more life and animation than the aged. I think the old, as well as the *weak* young, would be benefitted by being filled with electricity from an electric machine; weakness, as I have said before, being caused by an absence of a sufficient quantity of electricity.

Will my theory explain clairvoyance? I think it will.

When the subject's body is exhausted of its electricity, the electric fluid in the air would naturally strive to force an entry. Well, let it, and we can give direction to it. We know, that if we have a rod, a good conductor of electricity, a shock at one end is felt as soon as at another, no matter how long it may be. The brain of a person is a battery, and in the case of the subject, the magnetiser can direct the surrounding electric fluid to be conducted to the perceptive organs of the intellect of the subject, and fix there as a point one end of an electric line, and carry the other any where else he wills—the air being a good carrier of the fluid; and, by this, the subject can see all over the earth, travel through space, till the other end of the electric line shall reach, if the magnetiser wills it, the stars, the moon, and the sun, and be able to tell and explain all and every thing. There being no electricity in the subject when magnetised, the whole of that in the air seems to be at his disposal; and when willed by the operator, the subject can give direction to it, and with one end of the chain in his own (the subject's) brain, his battery, or his perceptive faculties, he can carry the other through every obstacle in a straight and immediate line, and see whatever the pathetiser wills, and that as quickly as a shock can be carried by a good conducting rod—instantaneously.

As to the other branch, called Cephology, I would explain it as follows. When you place your finger on an organ, it receives either a superabundance of electricity from yourself, or else you draw out the magnetic fluid and cause the electric to rush upon that spot from within his own system. In either case there is *too much electric fluid* there, and it produces monomania.

P. J. BECK.

Bridgeport, Conn., Feb. 19, 1843.

PATHETOLOGY.

For the Magnet.

THE PROGRESS OF TRUTH.

Upon taking a retrospective view of the past, the conviction is forced upon us, that we are now enacting the same career of hostility against new ideas and new truths, that we so strongly reprobrate in all past ages, and that, too, with no better reasons than our ancestors had for their opposition—merely because these truths do not agree with our preconceived ideas. A little reflection would show us, that the daily and hourly phenomena of our existence are to us almost all equally inexplicable, and that there lies only this difference between them: with the one, we are familiar—with the other, we must seek to become so.

Columbus was looked upon by his contemporaries as the greatest humbug of his day, and considered little better than a madman. Jenner, when toiling to introduce that great blessing, vaccination, was also a humbug: no ridicule was spared—even from the pulpit vaccination was denounced as an invention of Satan, and Jenner himself made the subject of vile caricatures. Copernicus, Galileo, and a host of others, were all the "humbugs" of their time. Verily, with such humbugs for company, the advocates and fearless defenders of pathetism need not shrink from their task.

There exists three distinct stages, as a good observer of human events has justly remarked, through which all new and important truths are fated to pass. First: "it is utterly false," "too ridiculous to deserve serious refutation," and "he who affirms it is either an impostor or a madman." Second stage: "there is something in it," "'tis true,"—"*but*—it is dangerous to morals," "contrary to and subversive of all religion." Third and last stage: when all deny ever having doubted it, because it was self-evident, and none but fools could doubt. If we read and took more interest in the biography of those great minds, whose struggles and sacrifices in support of truth have so great a claim to our warmest gratitude, we should learn modesty, at least, if nothing else; and being much in need of that quality, our gain would already be very great. We would then hesitate to pronounce so hastily upon nature's laws, and say, "thus far shalt thou go and no farther." What, we might ask, in the present state of our knowledge, do we know of the connexion of spirit, mind, and matter? If any knowledge of it should ever be unveiled to man, which now seems even probable, will it not be new, and, because new, must it necessarily be false? Strange, that the past should not make us more cautious and wise at the present! A little reasoning shows us, almost to a demonstration, that, in our turn, we shall be looked upon with the same pity for our rejection and persecution of truth, with which we regard her persecutors in days gone by—days which in all the plenitude of assumed wisdom we pronounce days of ignorance. To prove this, let us make a little promenade into futurity, no further than fifty years ahead, and suppose (which no doubt will be the case), that arts, sciences, inventions, and discoveries, continue to advance in the same ratio that they have for the last fifty years past: shall we not plainly see, that the days of ignorance will belong to us of the present age?

Theories, when given merely to be tested, and not as positive truths, can do no injury; for, if not supported by facts and experiments, they must fall; at the same time, they often lead to a more careful observation of certain facts.

Is not, perhaps, the perception, developed by the

invisible agent called pathetism, the spirit or soul, which, for the time that the physical organs continue in trance, is, as it were, released from its confining limits, and thereby enabled to act with greatly increased powers, for sight, hearing, feeling, perception, seem to most somnipathists a unit; they appear rather to know than to see. In what manner this spirit can be taking cognizance of objects at a distance, while it is still in so close connexion with the body as to enable it to make use of the organs of speech, and that, too, when all the avenues of perception are closed as if in death, remains as yet one of nature's many mysteries that we have not unravelled.

A contributor to your journal mentions having made perfect magnets of some needles placed upon an inverted glass, by the usual method of pathetising. We can also attest to the truth of this interesting fact, having more than three years ago pathetised two pieces of steel, which have remained good magnets ever since, although never afterwards retouched, or brought in contact with any other magnet.

The best mode of commencing an investigation of this science, for science we may fearlessly call it, is to read, attentively, the best writers upon it. True, our library is small: we are far behind the Germans and French, who can boast of a hundred volumes; but what we have, both originally in English and by translation, is all very good; and add to them this valuable periodical, the Magnet, and we already have a school, not to be neglected. The old adage of "seeing is believing," does not apply to this subject, the phenomena being so startling and transcendantly wonderful, that it requires us to become familiarised by degrees, and then we also know better what to expect when we see it experimentally. Otherwise, many things appear to us contradictory which belong to invariable laws, and we are more startled and puzzled than enlightened. In fact, the same result follows as in the case of two travellers, the one educated, the other not so: they both *look*, but only one of them really sees. M. H.

Washington, D.C., March 19, 1843.

PATHETISM.

Probably most of our readers have heard of the Rev. La Roy Sunderland, and his experiments in Human Physiology, during a year or two past, which have so much interested the scientific world. Having, ourselves been favored by Mr. Sunderland, with an opportunity of witnessing some of his experiments, and believing that a brief account of what we have seen would interest some of our readers, we have concluded to give the following a place in our columns. But, in doing so, we must beg our readers to notice:—

1. That the following, has nothing to do, *pro* or *con*, with any matter of religious faith. It is a mere detail of *physiological* facts to be accounted for or explained as the reader may choose.

2. We give no opinion, of the details, except to express our entire confidence in the honesty and integrity of Mr. Sunderland, whom we know, and also in the uprightness of the subjects on whom the following experiments were performed. We cannot suppose it possible, that there could have been any collusion between the operator and his patients; not only from our knowledge of Mr. Sunderland, but also, because, a number of our first physicians were present, at the time, and men abundantly able to detect the fraud, had any existed.

3. Though the following is not given as bearing in any way upon any feature of the Protestant faith, yet, there is one point of view in which some of Mr. Sunderland's experiments assume an aspect of great importance. We allude to the fact, that he assumes to be able to produce a state of *ecstacy* or *trance*, which is made so much account of by the Papists, as a state purely MIRACULOUS. Indeed, the Papists of this city have just published a book, purporting to give an account of two females in Austria who have been in what they call a *miraculous* state of *ecstacy*, for years, and one of them the account states has not eaten, nor drunk, nor slept for more than eight years! This book Mr. Sunderland has read, and he gives it as his opinion, that so far as there may have been anything like *trance* or *ecstacy* in the cases detailed by the Earl of Shrewsbury, they are resolvable into the physical laws of the system, and, which produce those states, in persons of a peculiar temperament; and this Mr. Sunderland infers from the fact, that he has, times without number, produced this state, by what he calls *pathetism*, or sympathy.

Though he uses the term *pathetism*, to signify more than is usually meant by sympathy; he applies it to signify *susceptibility*, to *passion*, *emotion* or *feeling*, of any kind, produced by manipulation, and that *agency*, also, by which any effects of this kind are produced on the mind, or physical system. But to the experiments. Wednesday, Feb. 15, 1843, we repaired to Mr. Sunderland's office, 73 Chambers street, New York, where we found a few friends together with a number of physicians, assembled to witness the results described below.

1. The first experiment was on an intelligent Christian lady of about twenty six. Mr. Sunderland stood behind her chair, and placing one finger on each side of her head, her eyes closed in a few minutes; and to all appearance, she was in a sound sleep, with this exception, that she seemed partially conscious of what was said in her presence, but she manifested great unwillingness to talk. She described her state, as one of complete *abstraction*, her mind, she said, seemed elevated far above the body, and the things of this world. Her countenance assumed a most expressive and heavenly appearance, and she declared that her perceptions of the spiritual world, and the happiness of its inhabitants was as real as any thing she had ever seen with her eyes.

This state Mr. Sunderland declared, was, as far as he could judge, *identical* with that called *Trance* or *Ecstacy*, having, as he said, seen and examined, many cases, of this state, into which persons of a peculiar temperament have been known to fall, especially under religious excitement.

2. The next experiment was on another lady present, whom he put into what he called a state of *somnipathy*, usually denominated somnambulism. As far as we could perceive, after Mr. Sunderland had merely placed his hands on her head, for a few moments, she could neither hear, nor see, nor indeed, use any of the organs of sense in the usual way. The effects on the muscles were most astonishing. Her left hand was raised by Mr. S. and placed on her head; our attempts to remove it were utterly unavailing, without doing manifest violence to the system. To move that arm, would move the whole body. One of the physicians present, signified, (privately) to Mr. Sunderland, that he should cause the patient to relax that arm, merely by an effort of his *will;* and without touching her, or anything signified audibly, the arm fell into the lap, as if deprived of life. The right arm was then stretched out horizontally, and became so rigid that it appeared to be literally frozen. After remaining in that position, as before, Mr. S. was requested to cause it to be relaxed by his will; and, in a moment, it became perfectly relaxed again.

Mr. S. was requested to cause her, by his will, to rise up, and walk to the other side of the room; and, in a moment or two, she arose, and advanced slowly, till she was ordered again to take her seat.

These effects of the will over the nervous system of another would seem to be quite simple according to Mr Sunderland's theory, which our readers will find explained in a work, called "The Magnet," of which he is the editor, published at 138 Fulton Street, N. Y.

3. Mr. Sunderland now proposed to show us some demonstrations in what he calls, *Cephology*, showing the *susceptibilities* and *influences* of the human brain; and he applies this term to this class of experiments, merely because they are performed by operating on the face, and *head*.

Placing two of his fingers on a portion of her head, above, and outside of the eyes, the patient commenced *singing;* and extending two other fingers to a portion still higher, she mingled her singing with laughter; and, after singing some light air, and laughing, for some minutes, Mr. S. (keeping his fingers on the organs of tune, and removing them from mirth,) placed another finger on the top of the head, when the patient changed her tune to Old Hundred, and appeared quite solemn; and on changing his fingers, back, and forth, in the above manner, the patient also changed her tones, features, and music, from the lively to the grave, a number of times.

On applying his fingers to other portions of the head, the patient manifested various passions and emotions, such as anger, ill-nature, devotion, imitation, &c. &c.

4. There were, also, two gentlemen present on which various experiments were performed, such as rendering the arms, mouth, and other muscles perfectly rigid, so much so, that the patients could not control them at all; and demonstrating the existence of certain laws which govern the nervous system, which seem not to have been so well understood heretofore.

Mr. Sunderland thinks this *susceptibility*, and the *agency*, by which he produces these results, (and which he calls *Pathetism*), are destined to throw great light on the states of mind called *Insanity and Somnambulism*, and the various fanatical delusions which have done so much mischief in the world.—*American Millenarian.*

MAGNETISM.

MAGNETISM.

BY RICHARD ADAMS LOCKE.

But while the magnetic poles are thus performing their revolution latitudinarily, they are also ascending spirally to a higher latitude, and the angle of their ascent is the angle of the line of no-variation with the earth's axis, and is probably the cause of it. The *rate* of their ascent is exactly the ascent of the earth's axis, or of the diminution of the obliquity of the ecliptic so well known to astronomers, although they do not yet know that the one is the cause of the other. This, then, brings us to the consideration of that grand periodical mutation in the position of the earth's axis toward the sun, which has occasioned the most momentous changes that have occured in the history of our planet, and in the condition of its inhabitants and productions through vast cycles of time. This revolution of the earth's axis, though well known to the ancients, and the great theme of of their poets and philosophers—depicted in the spiral circles of their temples, and taught to the initiated in their noble orreries and zodiacs—has been lost to modern science, or at least, since the wholly gratutious hypothesis of the celebrated Laplace concerning the future perturbing influence of the planets, has been limited to an oscillatory motion, upward and downward of between two and three degrees. Granting him his premises, the calculations of Laplace might be conclusive, but disputing his first assumption they would fall to the ground, and the united testimony of antiquity and geology would be established. The mathematical evidence which I might offer in corroboration, is ill-adapted to a popular lecture which can embrace only general views and arguments; but I hesitate not to say, that that higher order of proof, derived from the forces of the sun, appears to me to be clear, conclusive, and unanswerable, and must eventually supersede the modern hypothesis. All the observations of the obiquity of the ecliptic that have reached us from ancient times—and they extend very far beyond the Christian era—show the earth's axis to be ascending. "The oldest recorded observation of the ecliptic," says Dr. Sherwood, "that has reached us, is that given to Alexander by Berosus, the astronomer of Babylon, who told him, and the philosophers who accompanied him on his expedition to Babylon, that it was then 430,000 years since the earth's axis was in the plane of the ecliptic, and the obliquity 90°; and he showed them astronomical observations extending back to that time, which with many thousand very ancient documents and monuments, are said to have been destroyed by the crusades of the Therapeutæ. The next oldest recorded observation which is that of the Chinese, about which there is no dispute, when the obliquity was 24°, and which carries us back to 3,456 years, since which time the magnetic poles have made five entire revolutions round the earth, and have advanced 68° 11′ 17″ into the sixth, and must, consequently, have advanced in a spiral manner, and at an angle with the parallels of the latitudes. The next observation is that of Pytheas, 330 years before Christ, who found it 23° 50′; and as it is now well known to be about 23° 58′, the arctic and antarctic circle must have advanced more than half a degree since the time of this observation. Different mathematicians have calculated the rate of the decrease of the obliquity of the ecliptic from 50″ to 58″ in a century, but I have adopted the secular or mean rate, used by the ancients, of 56″ 15‴, which gives an annual rate of 33‴ 45⁗, and there are good reasons for believing these to be the true mean rates."

I will now refer you to the diagram, in which the different positions of the Earth's axis toward the Sun and in sixteen periods of 144,000 years each, are exhibited. [This diagram was projected upon the pattern of a very ancient zodiac of sixteen divisions which still exists.] In the lowest and uppermost circles around the larger one, you will perceive the axis in the plane of the ecliptic, with pole presented toward the Sun, the North pole toward the Sun in the one, and the South pole in the other—the hemispheres being thus reversed to 1,152,000 years, or in half of the entire revolution of 2,304,000 years to the position again. In this situation of the Earth the magnetic poles, which are ever perpendicular to the plane of the ecliptic (the Earth moving under them, in reality,) and parellel to the axis of the Sun, were in the equator; the Sun instead of passing round the equator, moved annually upon the meridian of the axis of rotation, or from one pole of the axis to the other. So that the days and nights were then as long as the seasons, being each six months, one side of the earth being in darkness and frost, and the other in fierce sunshine alternately. I

leave your imaginations to depict the horrors of such an age, and of the dreadful commotions of the elements that prevailed. It was indeed the "age of horrors," or the "iron age," so frequently referred to by ancient poets and philosophers, which is also often alluded to in the Scriptures, and of which the Earth still retains the appalling scars, and from which we have gradually emerged. In that position of the Globe, the Sun rapidly passed over 180 degrees of latitude, in the time that it now passes 46° 56′, or from tropic to tropic, for the poles of the Earth *were* the tropics. A modern Geologist, (Prof. Agassis of Neuchatal,) has lately presented to the public a most impressive view of the awful condition of our World in this period, derived from many years' study of the Geology of the Alps and other countries, and a portion of it is published in the last number of the Eclectic Review (in this city,) to which I solicit your particular attention. His discription exactly accords with what must necessarily have existed from this position of the axis, and which could not, without a special miracle for the purpose, have arisen from any other cause, and it is not merely unphilosophical but fanatical to resort to a miracle for the explanation of phenomena for which we have natural causes. He states, as we know must have been the case, that the waters must then have prevailed over the greater part of the earth, leaving the region of the equator the most exempt, and been kept (except in that region) perpetually frozen, except such portion of the ice as would have been melted into rushing, frightful floods in the rapid course of the sun. The effects of the falling icebergs upon the surface of the rocks, and the transportation of immense masses of the latter to remote places, he has traced from observation; and his discoveries, will have great weight in restoring the ancient science, and in introducing a far more rational and liberal theory of Geology than is now adopted. It will be unnecessary to resort to the marvellous theory of the rise and depression of whole continents, by the action of the internal fires of the earth, since the rise and fall of the waters will answer the same purpose, account for the same results (except those purely volcanic, or belonging to the chrystaline period, of primitive rocks, when the earth was in a formative state,) and harmonize with the changes now observed to be in progress. Whether the land be rising and falling or not, the waters are, and that too in the latitudes and directions corresponding with the changing position of the earth's axis, so that geologists may adopt whichever class of causes they deem the least difficult or more probable. In this position of the globe, the race of man and all living things, both vegetable and animal, must have been at its minimum, in numbers, stature, and longevity; for such extremes as then existed must have been unfavorable to life, and the frigid or negative principle, which never produces any living thing, then chiefly predominated. In intellect as in stature, man would be in his most inferior stage, perhaps even more inferior to those specimens of the race which still exist in the frozen regions of the north. The poets (particularly *Ovid* in his sketch of the "Iron Age,") describes the moral and social condition of man as being as vicious and as wretched as his physical one; the ameliorating influences of arts, science, and knowledge gone, and a darkness of mind succeeding equal to that of his long winter nights.

But turn we now to a somewhat, though scarcely much improved state of things after the lapse of 144,000 years, when the axis had ascended 22° 30′, and the tropics were at this distance from the poles of the axis of rotation. The Magnetic poles were then at this distance from the Equator, and nearly where our tropics now are, so that there were then the arctic and antarctic circles, and our present circles of this name were nearly the tropics of that age. In another period of 144,000 years the axis ascended another 22°, 30′, or eighth portion of the circle, and was then an angle of 45°. The tropical circle had then advanced from the poles, and the arctic and antarctic circles from the equator, until they coincided, and were both equidistant from the equator and the poles. This must have been an age of the world of great interest and improvements, though far inferior to that we now enjoy. There is much reason for supposing, from the evidence to be gathered from Dr. Stukely's curious and celebrated work on the ruins of Stonehenge and Aubury, that these marvelous and mysterious structures were erected in this age, for they are built at an angle of 45° with our present meridian, and their astronomical character, arising probably from their being devoted to the worship of the Sun, is so palpable as to be scarcely questionable. And there are many other ancient remains of solar temples, which appear to indicate the era of their erection by a similar rule. Indeed, the chief temple of Solomon, as well as those other temples which he erected when he openly became a Sun-worshipper, afford similar indications, and there are some curious reasons for thinking that the magnetic needle, though erroneously supposed to be quite a modern discovery, was used in the ancient mysteries in connexion with the art of architecture. The architects of ancient times were versed in astronomy, and every builder becoming initiated into the secret of his craft was deprived of iron and all other metals, lest, as it is said, it should affect those operations of that instrument which were among the subjects of his study; and we are all familiar with the tradition that no implement of iron was used in the erection of the great Jewish temple to which I have referred—a tradition, however, which may be rather symbolically than literally true.

The third division of the circle, brings us within that amount of the obliquity of the ecliptic in which the earth is now situated, and which may be regarded as the commencement of the "Golden Age" of the poets, the "Millennium" of the prophets, and the *Cali-yug*, or genial age, of the Hindoos. It is a remarkable and most striking fact, that adopting the rate of motion before mentioned, as the mean rate for the whole period of 2,304,000 years, the date of the commencement of this glorious period, upon which the ancients expatiated with such fervor, and the poets and prophets in such glowing numbers, is also the date of the Christian era. That the heathen world expected their golden age to begin about this period is evident from the 4th Eclogue of Virgil, which I regret I have not at hand to read to you, in which it is warmly portrayed in the prophecy of the Cumæon Sybil. She speaks of the birth of the illustrious boy, in whose reign the earth was to become a paradise of happiness and fertility, as the Hebrew prophets did; and the imagination of the writers of most, if not all, the enlightened heathen nations fondly dwelt upon this age as that which their astronomers predicted would be ushered in at that time. Yes, in 144,000 years from the date of the birth of Christ, allowing for the gradual decrease of our years from 365 days to 360, which the year will become, the axis of the earth will be perpendicular to the plane of the ecliptic; the magnetic and terrestial axes will then coincide, and, of course, the magnetic and the terrestrial equators. The magnetic vortices will crown the poles of the earth, and the magnetic and terrestrial meridians will everywhere coincide; the days and nights, instead of being six months

each, as they were in the age of horror, when the axis was parallel to the plane of the ecliptic, will each be of twelve hours; the sun will shine from pole to pole in every part of the Earth's annual orbit, perennial spring will load its valleys with fertility, clothe its hills with verdure, even to the tops of its mountains. The last memorials of the "iron age," or ice period, which still linger upon these summits and begird the frozen zone with thick-ribbed ice, and stupendous monuments of congelation which would seem to be imperishable, will melt away, and flowers and forests will take their place. Already have we seen animals which existed prior to the last frozen period, and probably the degenerate relics of a previous golden age, thawed out of their chrystal sepulchres, and exposed to our wondering gaze with their bones, their flesh, and even their hairy covering, still in perfect preservation. And the thaw will continue until the whole earth is as a summer garden, producing spontaneously all that is necessary to supply the wants of man and all other living beings, almost incomparably numerous as they will become at that period, and the longevity of all will be at its maximum.—'There shall be no more thence an infant of days,' says the prophet Isaiah, 'nor an old man that hath not fulfilled his days, for a child shall die an hundred years old'—so great, as in the last golden age of the Scriptures, will be the age of the mature man.

Whether those huge animals of which we find the remains, and which were the creations of that period, will appear again, by a gradual transition from other races, it may be in vain to enquire; but another prophet's vision of the valley of dry bones would seem to sanction the expectation. Certain it is that the 45th degree of latitude, and the adjacent latitudes in which these relics of stupendous organization are chiefly found, will then, as before, be the most fertile and productive both of animal and vegetable life, being midway to the equator, to which all rivers are now tending, and which will then be covered with water, and exposed to the direct rays of the sun, and the polar regions, which though free from ice and severe cold, will be without the dews of night, because there the sun will never set, but move round the horizon in perpetual apparition.

Yet this very place would seem to have been the paradise of the first parents to which we belong, for we find it stated in the scripture allegory in which their state is described, that both the tree of life, which I interpret as the magnetic axis of the earth, and the tree of knowledge of good and evil, by which I understand the axis of rotation, were in the midst of the garden, [Gen. ii. 9, and iii. 3,] as these axes demonstrably will be in the paradisiacal age. Indeed this beautiful and much misapprehended allegory, instead of being an account of a diabolical miracle, in which an animal without the organs of speech or the faculty of reason is made to talk and argue with the mother of mankind for the destruction of mankind, is, in reality, a profound and pregnant apologue, teaching that great doctrine of all antiquity, the physical and moral evils of the world that follow the descent of the earth's axis, in its serpentine course to the age of ice-floods and desolation. In this view that axis is indeed a tree of the knowledge of good and evil in the world. Its ascent causes all the good, and its descent all the evil, and the science of this tree is the knowledge of these its effects. Up to that, the period referred to, man had known only of its ascent; he was a new creature upon the earth, produced in the sixth revolution of axis, and in the middle of the golden age, when it was in the midst of the garden. But immediately after this it began to descend, and we soon detect the consequences in the production of the seasons. The human pair found out that they were naked, and they made some slight vegetable clothing; but this soon became insufficient for the increased cold, and the Lord God made them coats of skins and clothed them from its inclemency, a provision quite unnecessary had there been no change of climate. For, however moral evil may affect its agents and victims, we are not required to believe that it is the cause of all physical evil, that it influences the position of the earth's axis toward the sun, and produces that obliquity of the ecliptic which is the well known cause of the extremes of the seasons. That these results were brought about by the serpent I will freely admit, but that serpent was not a snake of any genus or species, but the serpentine or spiral motion of the earth's axis, under the influence of the magnetic poles, which are themselves controlled by the sun. And hence it is we find that this doctrine of the serpent has entered into the religion of every nation by which the sun has been worshipped—a worship more extensive than any other, and the doctrines of which still exist in many creeds where they are little suspected. The serpent, not as an object of dread, but hope, was held up by the great Jewish lawgiver for the encouragement of his people, and it is adopted even in the Christian system as an emblem of the great work of salvation. It is mentioned by Job in his astronomical allusion to the garniture of the heavens, and by most of the scripture writers, both Jewish and Christian. In Ezekiel's vision of the wheels, we have an inestimable view of the cycles of the heavens, as exhibited in the grand orreries of the temples; and in the Apocalypse we have not only the doctrine of the serpent, or spiral motion, but the very astronomical numbers and periods by which that motion is regulated, in a series of prophetic views which appear to embrace all the great mutations of the earth through the future periods of the destruction and renovation of all things.

I might greatly enlarge upon this interesting topic, but must forbear; the Hindoo Scriptures are equally profound upon these subjects with the Christian, and their harmony with the latter, and with the evidences of nature, are calculated to fill every unprejudiced student with that admiration and delight which the discovery of vast generalizing truths illustrative of the grand phenomena of nature, alone can inspire. I cannot refrain, however, from referring to the profound science embodied in one of the Scripture numbers about which there has been much controversy. If you will take the number 360, the division of the circle—and the French philosophers little know what they do in discarding this pure and faultless sexagesimal division for their new decimal one—and reducing it by 60, the number of minutes in a degree, then divide it by 666, the mystical number of the *beast* (or living creature), and thus reduce and divide until operation can be carried no farther, you will get a quotient of twelve results, expressing the mean diameter of the sun—not exactly, though very nearly, of that diameter as given in the astronomical works, the slight difference arising from the circumstance that the mean diameter of the sun, as popularly given, is taken according to the present ellipticity of the earth's orbit, while the diameter thus found embraces that greater ellipticity of orbit which accompanies a greater obliquity of the ecliptic; and, indeed, the whole range of ellipticity which follows the ascent of the earth's axis from a horizontal to a perpendicular position; for I may mention the discovery, that the ellipticity of orbits can be calculated in an easy and direct operation from the inclination of the axis by the great laws of Kepler, which have not heretofore been applied in this m n-

ner. And thus where the inclination of the axis is greatest the ellipticity is greatest; and when the inclination becomes minimum, the ellipticity will be minimum, so that in the golden age the orbit will be a perfect circle, and the year 360 days—one reason, no doubt, among many others, for the adoption of this very ancient, perhaps immemorial, division of the circle. The quotient thus obtained expresses not only the true mean diameter of the sun for this period, but the mean rate (32′ 36″) of the annual motion of the magnetic poles round the earth under the sun's forces, and the maximum amount of the projections of the earth at the equator when the axis becomes perpendicular, for it may be interesting to state that, as the ellipticity of the earth's orbit decreases, the ellipticity of the earth's form decreases; and when the former is minimum, the latter will be maximum, and *vice versa*. And the shape of the earth, or its deviation from a perfect sphere, as calculated from these numbers and principles, agrees, within the most trifling difference, with the figure of the earth as calculated from measurements of axes of the meridian, and demonstrated in the learned treatise by Professor Ayrey, the astronomer Royal of England. I might add that the table of the angles of the line of no variation, which, after deducting the flattening of the earth, is also a table of the angle of the moon's orbit round the earth, forms a perfect tide-table for every latitude, so that the mathematical demonstrations of these new principles of magnetic philosophy are conclusive, comprehensive and impregnable. Indeed it is the destiny of man to advance in certainty and to multiply the exact sciences until they embrace the whole field of nature. In the age which is proceeding, botany and other branches of natural history, as well as chemistry and geology, will be added to the exact sciences.

In the fullness of the golden age, upon which we have entered, all nature, so far at least as our Earth is concerned, will follow simple and regular laws, far less complicated in their phenomena than they now are, and more easily ascertained and demonstrated. Not only will mankind walk the Earth as gods and goddesses in form and beauty, but they will be as gods in knowledge, "knowing good and evil," in all their various relations of truth and error, happiness and misery. And will they not then discover that these qualities are but relative, existing purely in relation to each other, and having in the economy of the Divine Government, no abstract existence? "Shall we receive good at the hands of the Lord and not evil?" Is not evil essential to good, and good to evil? Are not these mere illustrations of the negative and positive principles or powers of nature, of which neither could exist without the other, and succeeding each other in an endless circle?

I have taxed your patience so long and so heavily upon this first division of my discourse, as to be compelled by time to dismiss the other with a rather amusingly proportioned brevity. I can scarcely do more than advert to that grand alternative of nature the destruction of all the creation which belongs to our solar system. If the two forces of nature always operate with strict mathematical equality, there would neither be creation nor dissolution, for they would balance each other, and the utmost there could be produced would be mere circles in space, composed of mere mathematical lines, without breadth or thickness. But if the attractions first prevail over the expansions, the free gaseous matter in space will be collected into spherical forms, as we reasoned at the opening of this subject, and such as these we see abound in the universe. The attractions combining to their ultimate results, must bring all matter together in one vast orb, to which the dimensions of our Sun now bear no comparison. This must be the final result of a predomination of attractions and contractions over repulsions and expansions, whatever intervening but inadequate reactions by repulsions may occur to protract it. At each change of the orbit of a planet from an eclipse to a circle, its era will be diminished, and when it returns to an ellipse again the era of that ellipse will not be so large as it was before. Thus the planet like an insect narrowing its circles round a taper, must ultimately run into the Sun to augment the already inceivable bulk of that luminary—a bulk, however, not larger in reference to infinite space than the smallest molecule in nature. This is its present progress and destiny, and I consider that we have data to calculate the period of its accomplishment, although the period would be too vast for comprehension were it developed. In the mean time, and probably long before that termination of our world's distinct existence, the condensation of its atmosphere and gases will renderit in unhabitable; will generate internal heat that will reduce it to a mere shell surrounded and filled with dense gases, and it will be received by the Sun in a state already nearly prepared for the next great alteration, that of expansion again, as gaseous matter into space, from whence it came and weither it must return. And thus the great circle of eternal alterations, with the geometrically perfect triangle of two forces and one matter within it as an active and unerring principle, will revolve forever, without end as without beginning.—*N. Y. Tribune.*

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THE MAGNET,

TO ITS READERS.

Many of you will doubtless remember, that when the Magnet was first offered for your patronage, it was a matter of some doubt whether it would be advisable to patronize it. It was quite uncertain in your mind, whether the enterprise could be sustained, and withal, there was so much deep rooted prejudice every where prevailing against the subjects to be treated of in its pages.—However, it has been continued through the year, and from month to month, you have been pleased with the matter with which its pages have been filled. Indeed, you have been agreeably disappointed; for you had no idea of finding yourself so much interested in the details of facts which had so long been reported by many as nothing more nor less than the offspring of deceived or dishonest minds. But candid investigation has left no room to doubt. In what we denominate *pathetism*, you now recognize an agency which is concerned in every feeling or emotion, or passion, or volition, or action which was ever felt, or put forth by any human being. You see that it has to do with the laws of animal life—with nervous *susceptibility* to pleasure or to pain. Without it man is but a lifeless body of matter. All the feelings therefore which one human being may be able to excite in the mind of another, whether pleasurable or otherwise, all the influence he is enabled to exert over mind, are identical with this same agency. If they be drugs from the materia medica, received into the stomach, or agencies applied to the surface of the body, their effects depend upon

this *susceptibility*, peculiar to the living body. Or, if impressions be made upon the sensorium through the eye or ear, or through the nerves of sensation, the immediate agency which carries those impressions to the mind is *pathetism*. Whatever the impression be, or whatever the minute agency by which it is made the medium through which it reaches the mind, is that *agency* or *susceptibility* which we denominate pathetism. It is heard in the tones of the voice, it is seen in the look of the eye, and the features of the face; and in its effects thus produced, nothing is thought of it, because these are common and always before the mind. But when precisely the same thing, is felt from the touch of the human hand, those not familiar with the true philosophy of mind start back and tell us this cannot be? But why not? What has been known, or what is now known of the human system, which proves, that the same influence may not be communicated to one, from the touch of the hand which, at other times reaches the soul through the eye, or the ear? Or, who has been able to tell *how* it is that an impression is made upon the *mind* through the *ear*? How does sound reach the intelligence? What is there in sound to effect *mind?* Or when the rays of light strike upon the optic nerves, what makes the intellect take cognizance of the image which they make there? In a word, *how* is it that what we call *mind* is impressed by natural agencies, in any way? Can matter control spirit?

And, pressing our inquiries thus far, we might ask an objector to tell us the difference between matter and spirit? What is an *element?* What are the laws by which mind and matter reciprocally effect each other? What is *life?* What is disease and death?

Do you say that we know nothing of these first principles; that we are in the dark as to the laws which operate in producing the most common occurrences of life? Then it must not, it will not be denied but that there are other things as mysterious and unaccountable, as the wonders of phrenopathy or clairvoyance. When we place the hand upon the head of another, and he manifests a feeling of sadness or joy; when by the same simple process, we cause him to weep or to sing, laugh or pray, to rave with madness or to soar in ecstacies of pleasurable emotions, is there any more real mystery in the agency by which these thing are done, than when one is made to weep by merely looking upon a scene of suffering; or when he is induced to sing from the influence of certain *sounds* which break upon his ear?

And thus of mental perceptions, when the external senses are closed. It is not uncommon for persons to have more vivid and impressive views of objects in their natural sleep, than they ever had in their waking state. The system being composed and all the faculties at rest, except the one or two whose excitement constitutes the dreaming, the energies of the whole seem to be concentrated upon those organs, and an impression is thus made more powerful than any which could be produced when all the organs are in a state of general wakefulness. The phenomenon of dreaming is common, and therefore excites no surprise. But when one is put into a state of sleep by artificial means, and in that state he is found to see with his eyes fast closed, and to have perceptions of distant objects, the phenomenon is new and we cannot admit it.

If we take two pieces of smooth soft iron, and put them in contact, we do not see that one has any influence upon the other; but if we rub one piece upon the other, in one direction only, for a length of time, we perceive, that by this process, we have established such a *relation* between the two, that they mutually attract each other. And yet, we cannot detect any substance in either of them which was not there before; nor do we see that a fluid of any kind is actually *communicated* by one and *received* by the other. All we know about this phenomenon is, that by a certain process, a *relation* has been established between those two pieces of iron, which causes them to stick together in this manner. What that relation is we do not know. It would seem, however, that this process had actually produced a difference in the *qualities* of those pieces of iron; for before they were passed upon each other in the way we have stated, they were precisely alike in *quality*; for on applying either of them to either pole of an ordinary magnet, they affected it exactly alike. But, not so, after they have been rubbed together, as above stated; for, after this process, one of them will be found to possess north polarity, and the other south; thus proving that though they were precisely alike in quality, before, yet, this process has changed the quality of both, and rendered them *susceptible* as above stated.

But who, on seeing this simple phenomenon, would set it down as humbuggery? And yet is there not precisely, as much of *mystery* and the marvellous in all this, as in any of the alleged effects produced by pathetism?

Every body knows, that the health of a well person is endangered more or less, by coming constantly in contact with another who is diseased. But by what law is disease communicated in such cases? Children who sleep with the aged and infirm, are known to become enfeebled, and sometimes, even to assume the decrepid appearance of old age. When the little one is hurt, by accident, the mother instinctiveiy, passes her hand over the place, as if it were a call of nature which prompted the removal of pain by this simple process. And you will see similar promptings of sympathy, even among animals, when their young or their species give signs of pain or suffering, so easy it is to trace this same law through the various grades of animal existence. Yet in all these things we see one of the laws of that *agency* and *susceptibility*, which we denominate pathetism; and we may understand, how mistaken the views of those persons are, who look upon the subjects discussed in the pages of this work, as exclusively connected with the marvellous, and confined to those who deal in jugglery, or fortune telling, or the mysteries of the "black art."

We see, moreover, how it is, that our labors present their claims upon the benevolence of the philanthropist, and the faith of the christian; in as much as the grand object is the investigation of those causes which induce the most frightful forms of disease and suffering which human beings can be doomed to endure. What disease is more to be dreaded than that of *insanity*? What affliction more terrible than that which deranges the mental functions, and unhinges the human mind? What more appalling than a disease which makes shipwreck of the intellect, and converts the reason into the ravings

of madness? What calamity like that which changes the dearest, tenderest ties of the kindest heart, into the bitterness of gall, and the furious paroxysms of hatred? What malady so frightful, so pregnant with woes, so difficult to manage, so painful to friends, and so fearful in its tendencies? Before the blight of this dreaded affliction, the fairest, tenderest flowers are swept away as by the blast of the tornado. The loftiest minds, the stars and suns of our intellectual heavens, are blotted out; neither age nor sex, nor profession, are spared. Even the consolations of our holy religion, the devoted christian, and the man of God, at the altar, are alike liable, and as often fall beneath this fatal scourge.

Alas! when, oh! when will professed christians see and know as they should do, that upon the laws, which we propose to investigate in the pages of this work, depend those states of the mind, which render obedience to the Divine Being, and religious enjoyments even possible; that the laws of mind, those laws by which mind is developed and made to understand its various relations, are as really the laws of God's appointing, as any contained in the sacred pages; and that the violation of these laws unfits us for the Divine will, as really as the commission of any other crime?

But we forbear, and will merely add, that we have the facilities for making our next volume, far more interesting and useful, we hope, than the present has been. It is our design to give more matter, directly bearing upon the various departments in Human Physiology, so that gentlemen in the medical profession as well as others, will find in our columns, a selection of pathological facts, which will render the Magnet not unacceptable to them, on this account, even though it should contain nothing of special interest in other respects.

It will be our object, also, to give more attention to the subject of Phrenology, as we are confident, we shall be able to do this subject more service than heretofore; and with the matter we shall be able to lay before our readers, from month to month, on the various other topics stated in our prospectus, we can but hope, that the Magnet for the coming year, will receive that amount of patronage which the importance of these subjects is so generally acknowledged to demand.

Trance and Natural Cloirvoyance.—There is, at the time of writing this article, (April 4), a case of trance and natural clairvoyance in this city, of considerable interest.

A young lady about sixteen years of age, made a public profession of religion and connected herself with one of the Methodist Episcopal churches here, about six weeks ago. For the last ten days she has been most of the time, in a state of *trance*, as her religious friends call it. It commenced very soon after she had been much *excited*, and had professed to become completely sanctified. She was observed to fall into an apparently unconscious state, and the limbs becoming quite rigid, precisely like the cases we have before described of natural somnambulists, or when we have induced the state by pathetism.

This is, undoubtedly, a case of somnambulism, though her friends, (some of them) think it quite *miraculous*.—She has, occasionally, a correct perception of the characters of different persons who enter her room, and will address them in reproofs, or exhortations to prayer and praise, according to their various characters, though she is said to have had no previous knowledge of them beforehand. When one enters her room who is pious or believed to be so by her, she clasps her hands into the form of what she calls "a crown," and places them upon his head; and the statements she makes about the character, views and feelings of those who have been to see her, are considered by her friends, as the miraculous interposition of the Divine Being. And we frankly confess, that there is every way as much of the miraculous in this case, as in those of the "Tyrol Virgins," noticed in our last.

One of her friends, a clerical lady, seemed to view it as quite profane, when we informed her that we had put persons into a state precisely similar, in which they had made descriptions of the characters of strangers every way as correct and remarkable as in the present case.—And it is curious enough, to see how honestly many good people will believe in a case of natural clairvoyance, when they are horror struck in being told that the same state may be artificially induced, without any thing of the *miraculous* in it. And we have been often reminded, that had we set up for "a prophet" before we restored a lady to her voice, (who had been mute for two years) last summer, or before we had performed some of the other cures already referred to in the Magnet, we might have held a successful competition with Joe Smith, and shared the chances with him of lining our pockets with gold instead of working for nothing, as we have done, and being reported as a mere juggler, or something worse.

ANTHROPOLOGY.

MAN AND HIS DISEASES.

BY P. CUNNINGHAM, ESQ.

CHOLERA.

In the section upon epidemic, I have pourtrayed the influence which the sol-lunar attractions and repulsions must naturally have in giving a westerly tendency to the magnetic matter composing it; and hence it is, on this account, unlikely that the epidemic effluvia causing the recent cholera in Europe, will return again by a westerly route. The great branches of the Mississippi will act in some measure as barriers to its westerly tendency in America, by carrying portions of it downward into the Mexican Gulf by the attractions of their current; while in the event of its crossing into the southern hemi-

sphere, the repulsion of the magnetic zone there will diffuse it more equally throughout the atmosphere, and consequently make it less intense in its attacks. It appears to commence as an excrementitious disease, and to continue so through all its stages; being characterised even at the outset by an increase of the pale magnetic secretions, and a decrease in the coloured electric ones, such as the bile and the urine; while the blackness of the blood, muscular spasms, shiverings, and diminution of bodily bulk, evince the magnetic action going on.

The blood we see to be reddened by the application of oxygen, which extracts the magnetism on which its dark tint depends; while the darkening of it by certain of the acids and the reddening of it by certain of the non-purgative salts, may be ascribed to the former imparting magnetism, and the latter electricity to it, acording as either of these latter bodies exist in excess over the other, in the state of mass, in the said acids or salts.

The ease given by vomiting, in cholera, points out the benefits to be derived by the ejection of the magnetic epidemia from the body, and I doubt not but many cases have been made to terminate fatally through the injudicious checking of this highly salutary process. In fact, in cholera, as in all cases where this occurs, it ought to be encouraged by plentiful dilution, in order the sooner to cut short disease, by the ejection from the system of the electro-magnetism causing it. But as it is frequently found impossible to produce vomiting in the violent cases of cholera by means of the usual emetics, I conceive this would be readily effected even in the most obstinate of them, by rapid rotation, which, even if failing as an emetic, would produce the similar result of ejecting the epidemia; while by tightly enveloping afterwards the whole body in folds of flannel, the epidemia would be prevented from reentering it after repulsion, and the cure be consequently completed.

The above remedies are applicable to the treatment of cholera, whether this be conducted on the stimulant or sedative principle, both of which have been successfully employed, the error liable to be committed being the mingling of the two, so that the one is thereby made to counteract the other. Should the recrementitious or stimulant treatment be resolved on, and collapse have taken place, the patient, after rotation to vomiting and approaching syncope, should drink freely of warm stimulating liquids, be enveloped in folds of flannel, have recrementitious remedies, such as charcoal, salt, calomel, &c. administered, the hot stomach-pan applied to the abdomen, and hot substances to the feet; gradually reducing the above when the stimulant reaction took place, in order to prevent the too violent recrementitious action, so liable to be induced by the too sudden checking of the previous excrementitious one. If, however, the sedative or excrementitious treatment be resolved on, the patient, after rotation to vomiting and approaching syncope, should then be lightly covered, drink freely of iced water, and have sedative remedies exhibited to assist the others, there by imbuing the body with a sufficiency of magnetism to check the deadly excrementitious action going on, upon the principles heretofore previously explained of electricity in excess, or magnetism in excess, putting a stop to galvanic action. Independently of thus putting a stop to the magnetic action going on, and thereby curing the cholera by excrementitious remedies, the simple carrying of the above magnetic or sedative action to excess, by the constant exhibition of magnetic remedies, would tend to bring on an electric or stimulant action, and thereby equally effect a cure, in consequence of the law in the human system, that the greater the intensity of the primary action, the sooner will the secondary action ensue, and the greater will be the intensity thereof. This is well exhibited in intermittent fever, the *intenser* the cold stage the *shorter* being its duration, and the intenser and *shorter* also the succeeding hot stage.

This alternation of electric and magnetic action in the system, seems referable to the strong attraction of electricity and magnetism for each other; so that when electricity is in excess in the body during recrementitious action, it will attract magnetism strongly toward it, and when magnetism is similarly in excess during excrementitious action, it will attract electricity toward it; so that the greater the primary excess of the one, the greater will be the subsequent amount of the other thus attracted, and the sooner therefore the peculiar action excited by either be put a stop to, provided the body be sufficiently strong to withstand the intensity of the primary attack.

The ease primarily afforded by iced drinks in cholera, seems attributable to the sedative influence of their action, from magnetism or cold being thus applied in excess near the seat of the disease; while the vomitings to which they eventually give rise on becoming heated by electric absorption, tend to render this cessation from diseased action permanent, by ejecting the magnetic epidemia exciting it from the body. In all the cases of cholera on board the Tyne, caustic applications over the cramped portion of the abdomen never failed of giving relief, their beneficial influence being doubtless as much owing to their translating of the galvanic action from the internal parts to the surface, as to their insulating effects upon the latter. Tight ligatures round the extremities have been found highly useful in arresting the progress of cramp, and the cold stage of intermittent fever, both magnetic paryoxysms, and having found the same result produced in several cases of severe dysenteric gripings, I am consequently disposed to believe that similar applications round various parts of the body would be found advantageous in cholera. Their utility must, I conceive, depend upon the resistance opposed by them to the onward motion of the bodily electricity, thereby exciting the latter to stronger efforts in order to overcome this resistance, and in consequence thereof eventually producing a general stimulant action throughout the system.

SCROFULA AND SCURVY.

Both of these are primarily recrementitious, as evidenced, by enlargement of the solids always preceding the excrementitious suppurations, ulcerations, perspirations, diarrhœas, and salivations, which usually accompany one or other of the above complaints; the correctness of this view being farther demonstrated by excrementitious remedies being found best adapted to the general treatment of them in our attempts to effect a cure. In scrofula there is a natural over activity in the recrementitious vessels, while in scurvy the over activity is produced by the too stimulant nature of the diet. People of two distinct species of hair, and complexion, are most prone to the attacks of scrofula, viz. those of yellowish hair and blue eyes, and those of straight black hair and black eyes; while persons of every color of hair seem equally liable to scurvy. The over intense recrementitious action in scurvy may be caused either by an excessive use of salted meats, spirituous liquors, mercurials or other powerful recrementitious substances; or to the recrementitious food, constituting the diet, being too digestible, and consequently too nutritious, either from being in a too fluid state, or else in a partial state of decay.

Scurvy will naturally be more readily excited by the above substances when the persons lead inactive lives, or do not use a sufficiency of excrementitious vegetables, or water: active exercises naturally accelerating the circulation of all the vessels, and thereby pushing on the matter of the food absorbed, from the recrementitious into the excrementitious vessels, before a thorough galvanic decomposition of it in the former had been effected; while water being the principal constituent of the excrementitious discharges, hence the necessity of supplying a sufficiency of it for excrementitious purposes, so as thereby to prevent recrementitious disease.

Water containing eighty per cent. of oxygen, must, consequently, I conceive, contain mass-magnetism in excess, and hence to this may partly be owing its use as an excrementitious remedy; while the fact of the sulphate of iron and other recrementitious salts giving out heat when dissolved in it, and the sulphates of soda and magnesia, and other excrementitious salts, giving out cold when so dissolved, afford an illustration of the views previously promulgated of recrementitious remedies requiring mass-electricity in excess, and excrementitious remedies mass-magnetism in excess, and point out the cause of the salutary effects produced by the exhibition of nitre in scurvy, which giving out cold in its solution in water, thereby shows it to contain mass-magnetism in excess, and consequently, that its effects upon the system must be excrementitious. A further illustration of the above view is afforded by bodies giving out cold, during the action of water upon them, always as far as I recollect, affording colourless solutions; while those which gave out heat, when acted upon by water, afford solutions corresponding in tint to some of the sun's magnetic rays, even though the substance dissolved be colorless.

The primary or leading action in scrofula and scurvy being, therefore, recrementitious, hence the salutary effects that have been found to result from excrementitious treatment in them:—a vegetable regimen and the exhibition of such substances as excite the excrementitious discharges, with an abstinence from all articles of diet which excite recrementitious action, being seldom found to fail in effecting a cure, while the recrementitious action is *still* the more active of the two.

Scurvy is a very rare disease at the present period to what it was in former times, which may be readily attributed to the more perfect mode of preserving the provisions now than formerly, whereby they are rendered less decomposible in the stomach, and consequently less recrementitious, as well as the more liberal supply of water for drink, the more general cleanliness and ventilation, and more general attention to the comforts of the men. I conceive, however, that the more liberal use of *tobacco*, both in smoking and chewing, has no small share in producing this result, its action upon the system indicating it to be a powerful magnetic substance; thereby showing that its effects upon the body must be similar to those of vegetables, vegetable acids, and other excrementitious substances. Merchant-ships are indeed, in modern times, quite as free from scurvy as ships of war, although less attention be paid in them to cleanliness and ventilation, and antiscorbutic remedies be furnished for the longest voyages; the seamen, however, making up for these deficiencies by the more active lives they lead, but particularly, as I conceive, by their using tobacco in one form or another during every watch. The use of tobacco must indeed be most salutary to those indulging in habitual excess in stimulant food or drink, by preventing the enlarged livers and other recrementitious diseases of the solids, which might otherwise ensue. It must be observed, however, that as diarrhœas and other excrementitious discharges often eventually cure the primary recrementitious disease: hence when such is the case, the excrementitious affection may be the one requiring attention from its proceeding to too great an excess.

It is on this account, I conceive, that calomel, exhibited to touch the gums, was found beneficial in several of the scorbutic bowel complaints at the Millbank Penitentiary, a scorbutic disease evidently brought on there by an over-nutritiousness of the food, and a want of that due exercise requisite for promoting the excrementitious discharges.

In the above diseases, characterised by a primary enlargement of the solids, the fat, a solid substance, seems to be little affected thereby; on the contrary, a morbid enlargement of the fat seems rather to denote a healthy state of the body than otherwise. This may be accounted for by its being a sort of medium between the solid and fluid secretions already treated of, so that its vessels, by their increased activity, will serve the useful purpose of keeping up a balanced action between the two other species of vessels, and thereby retain them in a healthy state.

SCROFULUS, OR TUBERCULOUS CONSUMPTION.

When scrofulous tumours in any part of the body suppurate, while others are still in a state of solid enlargement, a mixed disease is thus constituted; the action in the ulcerated, or suppurated tumours, being excrementitious, while that in those still progressing in solid enlargement, is recrementitious. We can, however, beneficially adapt a mixed treatment to this mixed disease, when the ulcerated parts are situated externally, by making the general remedies recrementitious; but when important internal organs, like the lungs, are so affected, where local remedies cannot be applied, the treatment must be exceedingly embarrassing; and hence the great utility of checking scrofulous action in youth, by suitable regimen, and suitable medicinal remedies, so as to prevent the many untractable diseases in particular parts to which it gives rise. General excrementitious remedies will tend to increase the morbid ulceration and discharge in the suppurated tumors, while general recrementitious remedies will tend to increase the solid enlargement of those affected with recrementitious action; but when the patient had a general relish for cooling fruits and cooling drinks, I would not hesitate to employ excrementitious diet, and administer cautiously excrementitious medicines, even should there be considerable expectoration or other excrementitious discharge. Rotations, shaving, and insulation of the chest, and spongings and frictions of the body, will be useful, whatever species of action is going on; but when scrofulous consumption does not speedily yield to the treatment pursued, the patient ought then to be removed to the southern hemisphere, where the magnetic polarity of the upper part of the body, and the more uniform diffusion of magnetism through the atmosphere, will, in all probability, arrest the disease, if timeously had recourse to.

BRONCHIAL CONSUMPTION.

This is an excrementitious disease of the bronchial tubes of the lungs, and eventually destroys, either through the profuseness of the discharge, or the gradual closing up of these tubes, by the contraction of their circular fibres, as constrictions in the urethra and rectum are produced by similar excrementitious diseases in these parts, viz. gleet and chronic dysentery. Bronchial consumption has indeed been denominated, by some, the gonorrhœa of the lungs, and I doubt not but the matter of it would be found

equally capable of propagating a similar disease, if brought in contact with the bronchiæ of a healthy lung. It is, I believe, the disease denominated in England "the galloping consumption," from the rapidity with which it carries off its victims, while it is the common consumption of the southern hemisphere, being infinitely more frequent there than in the north, though generally slower in its progress toward a fatal termination. The only two cases of death from this disease in the southern hemisphere that I have had an opportunity of examining, showed a complete shrivelling up of the greater portion of the lungs, in consequence of the contraction and obliteration of the bronchial tubes, muco-purulent matter filling the open spaces with a few sacs thereof, in the substance of the lungs, near their junction with their trachea. This appears to be the species of consumption so successfully treated by the Rev. Mr. Stewart with stimulating regimen, cold sponging, and frictions, and the one in which touching of the gums with mercury has been found so beneficial. A removal to the southern hemisphere would only aggravate this disease, on account of magnetism, the cause of it, occupying the other part of the body in the upright position there, and magnetism being more equally diffused through its atmosphere;—the hot latitudes of the northern tropics being the best adapted to its cure,—those latitudes in fact which will necessarily be the most injurious to scrofulous consumptive cases.

Scrofulous consumption is most common during the early stage of life, being seldom met with after the age of forty, when the advance of grey hairs enables magnetism gradually to preponderate over electricity in the body, and excrementitious action thus to keep the recrementitious in check. Bronchial consumption, on the contrary, is most common after the period for scrofulous consumption is past, the constitution becoming more and more susceptible to its attacks, and the disease more and more fatal as life advances. The bronchial inflammation exciting it, is indeed frequently epidemic, carrying off, under its name of influenza, the greater portion of the elderly people whom it assails.

A very common belief exists of consumption being occasionally infectious, and which, I think, not an improbable supposition, as regards the bronchial species of it, when a person of susceptible habit was exposed to the near inhalation of the foul air emitted from a highly diseased lung.

GOUT AND RHEUMATISM.

Both of these diseases are primarily recrementitious, ending in excrementitious action. They are sometimes conjoined, constituting the compiaint called rheumatic gout; but in a more distinct state. Gout affects principally the ligamentous capsules of the small joints, and rheumatism those of the larger, as well as occasionally the ligamentous partitions of the muscles;—the ensuing excrementitious actions of the former producing chalky-like depositions, and that of the latter, serous and gelatinous depositions. That the recrementitious action in rheumatism exists in the muscular fascia, is evidenced by the muscular thickenings or contractions which attend it, owing to the electricity on which muscular relaxation depends, being withdrawn therefrom to supply the electric or recrementitious action going on in the tendinous capsules enveloping them. In the acute stages of either, I would not hesitate to adopt the treatment pointed out in scurvy; but when the excrementitious action prevails over the former, and the chronic stage of it is thereby produced, the doses of the remedies should be lessened, and even a moderate proportion of stimulants might eventually be found to be beneficial.

Since the preceding views relative to the causes of diseases were taken by me, I have pursued the excrementitious plan of treatment with singular success in all cases of rheumatism that have come under my care, keeping the patient on low regimen, using daily warm spongings and frictions to the body, preserving the bowels in an open state, and exhibiting the Dover's powder in small doses throughout the day. I prefer small doses of medicines at short intervals, to large doses at long intervals, because a constant gentle action corresponding to the nature of the medicines prescribed, is thereby kept up; whereas, if large doses be given at long intervals, a reverse action of that excited by the medicines may take place in the interval, and thereby protract the cure. The benefits of this practice have been well proved to me in the comparative rapidity with which rheumatic cases have recovered since I administered the Dover's powder in small and frequent doses, to what they did formerly when a different course was pursued. In the most obstinate cases of lumbago, the hot stomach pan applied constantly to the back, has never failed of effecting a cure in a couple of days at the most. The hot vapour baths remove at once the pain of the muscular spasms, by the electricity which they infuse into the muscular fibres causing an elongation or relaxation of them, while the excrementitious perspirations to which they afterwards give rise, are found equally beneficial in arresting the recrementitious action going on in their tendinous envelopments. Rheumatism being a more general disease than gout, I would consequently, encircle tightly the whole body in dry flannel, after each rotation, warm sponging, and friction; but in gout it would be sufficient to confine the flannel envelopment to the part affected, with a padding of cotton wool over it, to insure a more perfect insulation.

CUTANEOUS DISEASES.

These being the sequelæ of recrementitious action, hence by the cure of the primary disease, the secondary will cease as a matter of course. This is particularly obvious in the rose rash of the face, where local applications are only of a temporary benefit, as long as the primary recrementitious action in the system which causes it, exists. In many constitutions it is not only necessary to abstain from stimulant solids, and stimulant fluids, but to keep up an excrementitious discharge from the bowels for several days, by means of the Epsom and other cooling salts, before local remedies are of much avail. I never failed of curing the most inveterate local cutaneous affections by the caustic solutions; the porrigo barbæ generally requiring, however, several touchings, before a cessation of its morbid action was attained; removing the crusts and pruning down the hairs previous to each application.

DELIRIUM TREMENS.

This is a primary recrementitious disease, terminating in excrementitious action, wherein the transitions from the one to the other being as sudden as violent, consequently great caution is requsite in the treatment pursued, because the remedies that would be salutary when the first action is going on, would be pernicious in the second; while even those requisite in either would be productive of bad results, if administered in large quantities from the too intense specific action they would respectively excite, only tending to bring about a more rapid and intense action of a contrary description, through which the disease would be necessarily prolonged, even if a fatal crisis should not, in the interim, be occasioned. Moderate rotations, cold sponging, frictions, and gentle evacuents must, however, be salutary, what-

ever species of action may be going on. The many well attested cases of spontaneous combustion show to what an extent galvanic action may proceed, and that the popular belief of a blue flame issuing at times from a person's mouth, who has drank stimulants to excess, may have a good foundation. As far as chemical knowledge at present extends, spontaneous ignition in such cases could only arise from the gaseous matter emitted from the lungs containing phosphorous, but if any inflammable gas happened to proceed therefrom, the approximation of a candle would be sufficient for this purpose; hydrogenous gases, capable of being so ignited by a candle, being, in fact, frequently formed in water casks at sea, as well as in the the bowels of animals, particularly the horse, so that a similar formation of it in particular cases in the lungs is a perfectly probable matter.

CANCER.

This is another specimen of a recrementitious disease, ending in, or rather alternating with, an excrementitious one; the solid enlargement and ulcerated decrease alternately progressing until death ensues through the extent of their combined ravages. The remedies found most successful by medical men have been caustics, metallic oxides, and pressure pads over the dressing, all deriving the principal portion, at least, of their beneficial influence from the insulating effect which they produce on the surface of the sore. It is, in fact, by a similar plan to this that empirics have cured so many cancers, inveterate tumours, and ulcers, applying primarily some potent caustic, and afterwards further insulating with some strongly adhesive plaster "to draw out," as they term it, the cancer. It was by a similar mode to this, that an empiric gained great reputation in a town where I once resided, in the cure of cancerous stiled substances, which after being extirpated, were preserved hanging down in bottles, "like roots of plants," (as expressed by a friend), the general certainty of the healing up of the sore after this extirpation, bearing ample testimony to the merits of his practice.

In accordance with the above view, I would cauterise freely the ulcer with nitrate of silver, pad it well with lint, and over it, as well as a considerable portion of the surrounding parts, place slip upon slip of adhesive plaster, after which cover all with a thick padding of cotton wool, and finally bandage down tightly, in order to exclude effectually the atmospheric air, and consequently the electro magnetism from the diseased superficies. As long as ease was secured, I would be in no hurry to renew the dressings, because the above feeling would be a sufficient guarantee that a sanitary action was going on, while each renewal would only serve to admit a fresh supply of electro-magnetism for the feeding of the disease.

LOCAL POISONS.

It is a disputed point, whether the poison from the bite or sting of reptiles or insects, be carried into the system through the nerves, the absorbents, or the blood vessels. However as insulation of the part poisoned, by means either of cauterisation, or cupping-glasses, prevents the accession of diseased action, it may be presumed that the poison so imbibed, attracts to it similar electro-magnetic matter to that constituting its active properties, and is carried into the system by the *vis a tergo* force of the latter; for how otherwise could the very small quantity of virus primarily imbibed, be capable of producing such fatal results, or the above insulating remedies present such an effectual barrier to its introduction. Whether the action excited by these poisons be recrementitious or excrementitious, that is whether electricity or magnetism be the leading cause of their actions, I have not sufficient proofs to draw satisfactory conclusions from, because the drowsiness caused by most of the stronger poisons may be as likely produced by excess of electricity as excess of magnetism, seeing that both in excess produce sedative effects.

The great benefits derived from the suction of poisoned wounds point out a similar powerful suction of all painful punctured wounds, until ease was obtained, as the most likely remedy to obviate the poisonous or tetanic effects that might result therefrom; particularly if care be taken to cauterise them well afterwards, and otherwise effectually insulate them from the electro-magnetism of the atmosphere. Rotation, until copious vomiting and approaching syncope ensue, cannot fail, I should conceive, of being highly useful in all cases of bites or stings of poisonous or rabid animals; the vomiting which so rapidly occurs in the bad cases of poisons, pointing out the means through which nature attempts to effect a cure by the restoration of an electro-magnetic equilibrium in the body, drinking freely of course at the same time to assist nature's efforts, because the greater the quantity of the tepid water drank, the greater would naturally be the amount of electro-magnetism ejected along with it, in consequence of its attracting that of the body, in a ratio corresponding to its bulk.

TETANUS.

The morbid spasmodic rigidity of the whole muscular system would seem to denote the primary action in this disease to be excrementitious, but I am disposed to believe that, like rheumatism, it is a recrementitious one of the muscular sheaths, thereby causing a contraction of the contained muscles, by the withdrawing from them of the electricity on which their elongation depended. If such be the case, excrementitious treatment must be the one required, using at the same time frequent rotation to vomiting and approaching syncope, with insulation of the body in the interim of the rotations, by means of flannel folds and cotton paddings.

TIC-DOLOREUX.

In the case of this disease at Islay, previously referred to, the insulation of the part where the nerve emerged from the skull, was found sufficient to effect a cure, but this might not always be so; I conceive, indeed, that the exciting cause of the tic-doloreux may generally be traced to some local irritation, on the removal of which it will naturally subside. Every medical man must have indeed witnessed permanent or recurring tumours, and ulcers about the face and gums, occasioned by diseased teeth, which speedily yielded on the extraction of the latter.

A short time ago, I was attacked with a tic-doloreux affecting all the branches of the portio dura, the pain, however, being naturally most acute at the point before the ear, where this nerve emerges from the brain, by pressure upon which with the fore finger, I was not only enabled to keep the pain completely under, but to moderate it greatly for some time afterwards. On removing the finger one day, after a short pressure, I felt a sudden painful twinge proceed from the front of the upper jaw towards the ear, which induced me to examine, by finger pressure, the parts around; when the cause of the disease was soon indicated to be a diseased eye-tooth, by perserving pressure upon the root of which, I at length succeeded in curing a disease, without the extraction of the tooth, which had become such a torment to me as to destroy many a night's rest. Every part of

the face and mouth ought, therefore, to be carefully examined in such cases, as the cause of it may as frequently lie in some irritable tumour, pimple, or ulcer, as in an irritable tooth.

ENTERITIS.

This is evidently a recrementitious disease of the muscular intestinal coats as plainly evinced by the abdominal tumefaction arising from the surcharge of the muscular fibres with electricity, through which they are elongated and consequently relaxed. In inflammation of the other intestinal coats, as exemplified in acute dysentery, the intestinal muscular fibres are on the contrary, contracted, owing to the electric matter which elongated them being now drawn off, for the supply of the morbid electric action going on in the other coats.

Purgatives in this complaint must, generally speaking, be pernicious, until the inflammatory action is subdued; but if we give them at all, they ought to be of the magnetic kind, viz. Epsom salts and such others as give out cold during their solution in water.

DROPSY AND DIABETES.

Both of these are excrementitious diseases, the first existing in the excretories of the bodily cavities, and the second in those of the kidnies. Mercury given in small doses until the gums are slightly touched must be highly useful in both; but when pushed to salivation, its effects must, generally speaking, be pernicious; because, although salivation is an excessive excrementitious action in a different system of excrementitious vessels to those of the bodily cavities and kidneys, yet the tendency of this action to shift from one class of excrementitious vessels to another, renders the excitation of it, in any one of them at all times doubtful; salivations, diarrhœas, and excessive perspirations and urinary discharges being all so liable to alternate with each other, on any one of them being too suddenly checked.

Indeed, mercury pushed too far is as liable to excite excessive action in the excrementitious vessels of the bowels, the kidnies or the skin, as in those of the salivary glands, and hence its administration ought to be instantly suspended the moment any of these are so affected; a case of diabetes having come under my cognizance which was brought on by a mercurial cause. The treatment of this latter disease by frequent small bleedings, so successfully pursued by Dr. Watts, might I doubt not, be equally advantageously employed in all other excrementitious diseases, producing as small bleedings do, a consecutive recrementitious action from the thinning of the blood rendering it more easily decomposed, or digested, by the electro-magnetism of the body, while at the same time, creating a demand or appetite in the latter for a further supply of recrementitious vascular food. It is upon small bleedings that farriers chiefly depend for the cure of horses falling off in flesh, or, in other words laboring under excrementitious disease; and as this remedy has been already beneficially employed in one species of excrementitious disease in the human body, I see no reason why it should not be extended to the whole. The species of bleedings thus required in recrementitious and excrementitious diseases, are necessarily as diverse as the medicines; small bleedings in the former being more likely to do harm than good, while in the latter large bleedings would tend to fatal results.

CONSTITUTIONAL RENEWAL.

The views relative to the action of electro-magnetism in the human body, which inductive reasoning and the conclusions drawn from the changes it produces have led me to adopt, induce me to believe, that old age is not the cause of gray hairs, but that gray hairs are the cause of old age, by the progressive magnetic blanching and drying up of the juicy texture of the hairs, enabling them to progressively attract a larger and larger amount of magnetism until the electricity which built up the human fabric, and retained it afterwards in vigour, no longer able to contend against the excessive magnetic introduction, yields gradually therero; through which life is eventually extinguished. If the above view be correct, therefore, provided we can accomplish the restoration of the primitive color and juicy texture of the hair, and there be no organic disease of any important vital part, we will be able to restore the decayed body to all the plumpness and vigour of middle life at least. Every medical man must have observed that blisters to the head have either altogether eradicated gray hairs, or at least made them less common on the parts to which they were applied, by re-converting of the hairs to their original tint.—The same effect is also often witnessed from the application of lunar caustic; and indeed blisters and caustic washes are at the present period successfully employed in changing the colour of the hair in the human subject, from gray to dark, while the white hairs upon the sites of sores in horses have their tint equally readily reversed by the blisterings and gunpowder ointment dressings used by the farriers.

The theory of the above reconversion of colour in the hair, seems referable to the insulation thereof from the magnetism of the atmosphere, by the non-magnetic conducting substances made use of, but whose electric conducting properties enable electricity to be freely conveyed into the system, and thereby, also, through the latter's eventual preponderance to progressively obliterate the ravages which the previous magnetic preponderance had effected. The means proposed being indeed of a very simple nature, an attempt might at all events, be made to ascertain how far the theory by which their beneficial effects are deduced be correct. I would commence by shaving the whole body, and pencilling it over daily with a weak lunar caustic solution, until a sufficiently dark tint was obtained; and on this showing a disposition to peel off, put the patient, morning and evening, in a tepid bath for a few minutes, drying well afterwards, and rubbing in upon the skin some unctuous substance of the color of the hair, such as charcoal ointment when the latter was dark, and palm oil when of a yellowish tint.

In addition to the above, I would have the head insulated with cotton wool, before the peeling off of the caustic, and with plasters of ointment, or palm oil, afterwards; employing at the same time moderate rotations, dieting moderately on nutritious soups and port wine, and retaining the body in proper warmth by sufficient clothing, and the mind in proper health by every agreeable amusement that could be devised. A few weeks of trial would be sufficient to ascertain the efficacy of the above treatment, as to whether a further perseverance therein would be advisable, tinting, however, in the interim, such hairs as had not changed their colour, and shaving all close twice a week at least during the progress of the experiment.

END OF VOL. I.